

RAKHMILEVICH, Z.Z., inzh.

Damping of pressure pulsations in pipelines using a reactive composite damping unit. Prom. energ. 20 no.11:30-32 N '65.
(MIRA 18:11)

ACC NM: AP6025060 (A,N) SOURCE CODE: UR/0094/66/000/005/0010/0014

AUTHOR: IJP(s) JDAN/D/JB Ryabtsev, N. I. (Engr.); Skol'nik, G. M. (Engr.); Rakhmilevich, Z. Z. (Engr.); Myslitskiy, Ye. N. (Engr.)

ORG: Promenergo Production-Technical Enterprise (Proizvodstvenno-tehnicheskoye predpriyatiye Promenergo)

TITLE: Straight through valves for piston air compressors

SOURCE: Promyshlennaya energetika, no. 5, 1966, 10-14

TOPIC TAGS: air compressor, ring valve, piston air compressor, valve design

ABSTRACT: The article describes in detail the advantages to be gained from the use of new straight-through valves, rather than the older ring type, on air compressors. These new valves were developed at the Leningrad Branch, All-Union Scientific-Research Institute for Chemical Machine Building (Leningradskiy filial Vsesoyuznogo nauchno-issledovatel'skogo instituta khimicheskogo mashinostroyeniya). The valves have seats made of light aluminum alloy AL-2 to ensure the required strength and casting properties. A total of 110 seats of 14 standard sizes is required to outfit a type 200V-10/8 compressor with these straight-through valves. These valves, which can be used with a wide variety of multistage air compressors (including the 2SA-8, 2R-20/8, VP-10/8, 2VP-20/8, 5VP-30/8, and the second stage of the 2V-100/8), were tested and found to be superior to ring valves in a number of important areas. For example,

Card 1/2

UDC: 521.512:62.33

ACC NR: AP6025060

using a system of wearing in the valves on an operating compressor, rather than machining them under nondynamic conditions, it was discovered that after 150 hr running time valve tightness exceeded specified standards, because of excellent alignment of disks to seats. Compressor output with the straight-through valves is 11% better after 200 hr than in the case of the ring type. Similarly, after 200 hr 15% less electric power is required to drive the compressor pistons (132 kw/hr as opposed to 170 kw/hr for the ring type to bring 1000 m³ to a pressure of 8 at:). Noise level and wear were also found to be significantly reduced, with delivery temperature reduced 13-15° in the first stage and 23-25° in the second. The article contains other information illustrating the improved efficiency which may be anticipated through the use of these valves. Orig. art. has: 4 figures.

SUB CODE: 13/ SUBM DATE: none

Card 2/2 CC

ROGOVOY, M.I.; GEL'TMAN, A.Z.; KCGAN, Z.B.; RAKHIMLEVICH, Ye.A.;
SILENOK, S.G., inzh., retsenzent; BULATOV, S.I., red.
izd-va; UVAROVA, A.F., tekhn. red.; TIMOFEEVA, N.V.,
tekhn. red.

[Equipment for the overall mechanization of the manufacture
of wall ceramics] Oborudovanie dlia kompleksnoi mekhaniza-
tsii proizvodstva stenovoi keramiki. Moskva, Izd-vo
"Mashinostroenie," 1964. 203 p. (MIRA 17:4)

RAKHMINA, R.A.; SEMCHENKO, D.P.

Conductance, viscosity, and density of calcium perchlorate,
aqueous solutions. Trudy NPI 146:3-15 '64.

Physicochemical properties of strontium perchlorate
aqueous solutions. Ibid.:17-25

(MIRA 18:11)

Kazakhstan, Yu., 1980 "Ergi Sari — (rice) "rice culture in Kazakhstan or all-Russian
practices on soil cultivation, development and稠ization of rice technologies,"
Tashkent, 1980, 42 pp (Tashkent Agricultural Institute)

(RL, 38-(C. 17))

RAKHMINOV, Yu.

Effect of soil fertility on fruiting in the cotton plant. Uzb.
biol.zhur. no.6:33-40 '58. (MIRA 12:1)

1. Institut genetiki i fiziologii rasteniy AN UzSSR.
(Cotton growing) (Soil fertility)

RAKHMINOV, Yu.

Growth and course of principal developmental phases in cotton
sown on unturned and turned-over grassland sod of various age.
Uzb.biol.zhur. no.4:40-49 '59. (MIR 13:1)

1. Tashkentskiy finansovo-ekonomicheskiy institut.
(Cotton growing)

S/081/63/000/001/012/061
B101/B186

AUTHORS: Talipov, Sh. T., Rakhmutallayev, K.

TITLE: Solubility in the system $\text{CeF}_4 - \text{KF} - \text{H}_2\text{O}$ at 25°C

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 1, 1963, 73 - 74, abstract 1B494 (Uzb. khim. zh., no. 6, 1961, 9 - 14 (summary in Uzb.))

TEXT: The solubility isotherm for the system $\text{CeF}_4 - \text{KF} - \text{H}_2\text{O}$ at 25°C was studied. The incongruently soluble double salts $\text{KF}\cdot\text{CeF}_4$, $5\text{KF}\cdot3\text{CeF}_4$, $2\text{KF}\cdot\text{CeF}_4$, and $3\text{KF}\cdot\text{CeF}_4$ form in the system. The fluoride of quadrivalent cerium were synthesized in two forms: white and yellowish-brown. The compositions in both correspond to the formula $\text{CeF}_4\cdot\text{H}_2\text{O}$. [Abstracter's note: Complete translation.]

Card 1/1

RAKHMETULLIN, G.I., inzh. po tekhnike bezopasnosti

Eliminate a structural defect in disk brakes of the ZIL-150
motortruck. Bezop.truda v prom. 6 no.4:32 Ap '62. (MIRA 15:5)

1. Neftepromyslovoye upravleniye Aksakovneft'.
(Motortrucks—Brakes)

TEL'PUKHOVSKIY, V.B.; DMITRENKO, T.A.; ZELENIN, I.Ye.; KOSTYAKOVA, G.K.;
RAKHMIN, B.P.; BORISOV, Yu.S., otv. red.; KRUCHINA, N.Ye., red.;
FEDOROV, A.G., red.; LYUBUSHKINA, Ye., red.; YEGOROVA, I., tekhn.
red.

[In the land of wide-open spaces and heroic deeds; youth in the
virgin lands] V kraiu prostorov i podvigov; molodezh na tseline.
Sbornik dokumentov. Moskva, Izd-vo TSK VLKSM "Molodaia gvardia,"
1962. 278 p. (MIHA 15:5)

(Agricultural laborers)

RAKHNO, A.R., inzh.

Automatic die for manufacturing grids. Mashinostroenie no.
2719-71 Mr-Ap '64. (MIRA 1745)

Kh

"The Role Played by Actinomycetes in Increasing the Productivity of Field Crops Under the Soil and Climatic Conditions of the Estonian SSR." Cand Biol Sci, Leningrad State U, Leningrad, 1953. (eZhBiol, No 1, Sep 54)

SO: Sum 432, 29 Mar 55

RAKHNO, P. Kh.; TOKHVER, V. I.

On the possibility of molecular nitrogen assimilation by certain
soil bacteria at a temperature of 50°. Dokl. AN SSSR 112 no.1:144-145
Ja '57. (MLRA 10:2)

1. Institut rasteniyevodstva Akademii nauk SSSR. Predstavлено
академиком А.Л.Курсановым.
(Bacteria, Nitrifying)

RAKHNO, P.Kh. [Rahno, P.]

Effect of moisture and low temperatures on the quantity of bacteria
in the soil. Mikrobiologiya 29 no.2:229-233 Mr-Ap '60. (MIRA 14:7)

1. Estonskiy nauchno-issledovatel'skiy institut zemledeliya i
melioratsii, Tallin.
(SOILS-BACTERIOLOGY) (COLD-PHYSIOLOGICAL EFFECT)
(SOIL MOISTURE)

RAKHNO, P.Kh. [Rakhno, P]

Stimulating mixtures and their effect on soil microorganisms
and plants. Trudy Inst. mikrobiol. no.11:48-55'61
(MIRA 16:11)

I. Estonskiy nauchno-issledovatel'skiy institut po melioratsii.

RAKHO, P.KH [Rahno, P.]; RYYS, O.O. [Roos.O.]

Use of Azotobacter preparations. Mikrobiologija 32 no.3:
558-561. My-Je'63 (MIRA 17:3)

1. Institut eksperimental'noy biologii Akademii Nauk Estonskoy SSR.

RAKHNO, P.Kh. [Rahno, P.], kand. biolog. nauk

Seasonal fluctuation of the development of soil bacteria. Vest.
AN SSSR 33 no.10:54-57 O '63. (MIRA 16:11)

1. Institut eksperimental'noy biologii AN Estonskoy SSR.

RABBY, David Iosifovich; EL'ENSKIY, Z. I. [ed.]

[Seasonal quantitative dynamics of soil bacteria and factors determining it] Sezonnaya koliches'tvennaya dinamika pochvennykh bakterii i faktory, otuslovlivayushchiye ee. Tallin, AN Estonskoi SSR, Inst ekperimental'noi biologii, 1964. 234 p.

OSADCHIY, V.Ya.; KAUFMAN, M.M.; NODEV, E.O.; RAKHNOVETSkiY, L.S.

New gauging of mandrels used in broaching stainless steel.
(MIRA 11:?)

Biul. TSNIICHEM no. 10:45-46 '58.
1. Moskovskiy institut stali(for Osadchiy). 2. Pervoural'skiy Novo-
trubnyy zavod(for Kaufman, Nodev, Rakhnovetskiy).
(Broaching machines)

PLYATSKOVSKIY, O.A., kand.tekhn.nauk; Prinimali uchastiye: OSLON, N.D.;
NODEV, E.O.; DEVYATISIL'NYY, V.I.; SULTINSKIKH, A.N.; SHANIN, P.K.;
KUKARSKIKH, V.I.; RAKHNOVETSKIY, L.Y.; DUYEV, V.N.

New technological processes used in rolling 102-170 mm. diameter
pipes of stainless steel 1Kh18N9T. Biul.nauch.-tekhn.inform.VNITI
no.4/5:24-30 '58. (MIRA 15:1)

(Pipe mills)

RAKHNOVICH, F.M., inzh.; STEPANOV, G.M., inzh.

Fight against dangerous static electricity in petroleum
refining plants. Prom. energ. 17 no.11:14-17 N '62.
(MIRA 15:12)

(Petroleum industry—Safety measures)
(Petroleum industry—Electric equipment)

69 76. Romanian, B. P. I. Iosifescu Ionel Levinski. Belorussian, M. V. Tsvetkov. T. P. Gerasimov. L. P. Tsvetkov. V. V. Kuznetsov. V. V. Voznesenskiy. S. S. S. S. - 49.

10. Report: Current Affairs, No. 30, Moscow, July.

RAKINSKIY, S.N.
25876

O Leptospirozykh Zabolevaniyakh. Soobsch. II I.M. Nikulinson i s.n. Rakinskij
Voyen.-Med. Zhurnal, 1948-No.6, S. 45-49

SO: LETOPIS NO. 30, 1948

AUTHORS: Nikolayeva, S. A., Rakhnu, S. 70-38-5-16/47

TITLE: The Effect of the Nature of Cations on the Specific Anion Adsorption (Vliyanie prirody kationov na spetsificheskuyu adsorbsiyu anionov)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol. 32, Nr 5,
pp. 1059 - 1062 (USSR)

ABSTRACT: In order to solve the problem whether in a specific adsorption of any anion the same potential is maintained in combination with different cations investigations were carried out of the electro-capillary curves according to the method by Gui (Reference 2) using a mercury cathode in solutions of chlorides, bromides and sulfates, which with the same concentrations of the anion contained different concentrations of the hydrogen- and potassium ions. According to the experimental results it is assumed that the cations also partly enter the adsorption layer of the anions and thus decrease the magnitude of the potential ψ . The amount of entering cations can here depend on the electric field strength of the anions, on the ratio of the radii of cations and anions in the solution, and on the part
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The Effect of the Nature of Cations on the Specific
Anion Adsorption

76-32-5-16/47

played by the specifically effective forces, e.g. complex formation. The obtained results for 1 N and 3 N solutions KCl + HCl correspond to the first assumption while for the decrease of the radius of the hydrated cations the series $H_3O^+ \text{aq} > Ca^{+2} \text{aq} > Ba^{+2} \text{aq} > K^+ \text{aq}$ is assumed, which is coinciding with the data by Wiklander (Reference 7); it is also assumed that with the anions the series

$Cl^- \text{aq} > Br^- \text{aq} > SO_4^{-2} \text{aq}$ has to be assumed which was proved by the experiments carried out. Finally the assumption by Graham (Reference 8) is mentioned by means of which also the character of the course of the curve can be explained. There are 6 figures, 1 table and 8 references, 6 of which are Soviet.

ASSOCIATION: Tartuskiy gosudarstvennyy universitet (Tartu State University)
SUBMITTED: January 11, 1957

Card 2/2 1. Ions--Adsorption 2. Ions--Properties

NIKOLAYEVA, S.A.; RAKHNU, S.

Effect of the nature of cations on the specificity of anion adsorption [with summary in English]. Zhur. fiz. khim. 32 no.5: 1059-1062 My '58. (MIRA 11:7)

1.Tartuskiy gosudarstvennyy universitet.
(Adsorption) (Ions)

RAKHOTSKIY, V., mayor

The lesson was instructive. Tyl i snab. Scv. Voor. Sil 21
no. 12:40-41 D '61. (MIRA 15:1)
(Military education)

RAKHOV, A. I.

USSR/Medicine - Antibiotics

JUN 50

"More About the Onion as a Powerful Therapeutic Agent," A. I. Rakhor

"Priroda" No 6, pp 74, 75

Reports on good results in veterinary medicine of the use of onion and garlic phytoncides in the treatment of wounds causing peritonitis and of peritonitis itself. States that under the action of vapors and the juice of onion, cultures of anthrax sporulate 8-10 hours earlier than cultures which have not been treated with phytoncides. As a

22210

result of the action of phytoncides, cultures of anthrax in meat-peptone broth and meat-peptone agar undergo various modifications of form up to and including coccoid forms.

22210

USSR

1923. An automatic machine for the pressing of refractories. V. N. HAKHOV (Ogushchensk). No. 20, 18, 1939. An automatic press for magnesite, chrome-magnesite, and other magnesites is described. (9 figs.)

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25

RAKHOVA, A. G.

USSR/Medicine - Bacteriology

Jan 50

"Effect of Onion on the Fermentative Activity of
the Anthrax Bacillus," A. G. Rakhova.

"Priroda" No 6, p 75

B. anthrax, strain 214, was found not to affect lactose or mannitol within 24 hrs, while glucose and saccharose underwent noticeable changes accompanied by formation of acids, but not of gas. The same culture did not ferment glucose or saccharose after it had been treated with onion juice. A spore culture of B. anthrax which had been exposed

222711

to onion vapors and then seeded on meat-peptone broth or meat-peptone agar showed formation of inviolated forms. Vapors of onion advance sporulation of the culture by 5-6 hrs.

222711

RAKHOVETSKIY, A.

Simplified method of establishing equivalent position lines. Mor. i rech. flot
13 no.4:9-11 Ag '53.
(MLRA 6:10)
(Navigation)

RACHOVETSKIY, A.

Determining a vessel's position by cruising bearings. Mor.flot 15
no.4:10-11 Ap '55. (MIRA 8:5)

1. Shturman parokhoda "Karaganda."
(Navigation)

DONDUA, S., kapitan dal'nego plavaniya; RAKHOVETSKIY, A., shturman
dal'nego plavaniya.

The listing of a vessel. Mor. flot 16 no.10:12-13 O '56.

(MLRA 9:11)

1. Chernomorskoya parokhodstvo.
(Load line) (Stability of ships)

RAKHOVETSKIY, A., shturman dal'nego plavaniya .

Some remarks on the use of radar. Mor.flot 17 no.3:12-13 Mr '57.
(MIRA 10:3)

1. Chernomorskoye parokhodstvo.
(Radar in navigation)

RAKHOVETSKIY, A., kapitan dal'nego plavaniya

Radar and maneuvering to avoid collision. Mor. flot 18 no. 4-5
Ap '58. (MIRA 12:12)

1. Odesskoye vysshye morekhodnoye uchilishche.
(Radar in navigation)

RAKHOVETSkiY, A., kapitan dal'nego plavaniya

Continuous and periodic radar observations. Mor.flot 20 no.10:
13 0'60. (MIRA 13:10)

1. Odesskoye vyasheye inzhenernoye morskoye uchilishche.
(Radar in navigation)

RAKHOVETSKIY, A., kapitan dal'nego playaniya

Accuracy of measuring the dip of the horizon with the Kavraiskii inclinometer. Mor. flet 21 no.9:19-20 S '61. (MIRA 14:9)

1. Odesskoye vyssheye inzhenernoye morskoye uchilishche.
(Horizon, Dip of)

RAKHOVETSKIY, A., prepodavatel:

Revision of the zonality of load marks. Mor.flot 22 no.1:21-22
Ja '62. (MIRA 15:1)

1. Odesskoye vyssheye inzhenernoye morskoye uchilishche.
(Load line)

RAKHOVETSKIY, A.

Effect of raising the eyes of an observer on the accuracy
of astronomical observations. Mor. flot 23 no.8:16-17
Ag '63. (MIRA 16:11)

1. Glavnnyy shturman Chernomorskogo parokhodstva.

RAKHOVETSKIY, A.

Improve the contents of marine sailing directions.
Mor. flot. 24 no.5:19-20 My '64. (MIRA 18:12)

1. Glavnnyy shturman Chernomorskogo parokhodstva.

L 27287-65 EWT(1)/FS(v)-3/EWP(m)/ENG(v)/T Po-4/Pq-4/Pe-5/Pg-4 GW

ACCESSION NR: AP5003938

S/0308/65/000/001/0020/0021

AUTHOR: Rakhovetskiy, A. (Chief navigator)

39
28B

TITLE: Random errors in measuring the altitudes of celestial bodies over the sea

SOURCE: Morskoy flot, no. 1, 1965, 20-21

TOPIC TAGS: celestial body motion, sextant, celestial mechanics

ABSTRACT: The causes of the errors arising in measurement of altitudes of celestial bodies are linked to the abilities of the observer, to the quality of the sextant, and to external conditions (illumination, weather, etc.). The effect of the random errors is estimated by means of the average square error ϵ_h . To analyze ϵ_h , numerous altitude measurements of celestial bodies were studied.

The measurement precision was found to depend basically on the horizon conditions. With a sharply defined horizon, ϵ_h of a single sun observation $\approx 0'.4$. All experienced observers obtained similar accuracy with similar horizons. For an average horizon, ϵ_h for sun shots is $0'.5 - 0'.7$. For twilight observations, the horizon is constantly changing, and only measurements taken while the sun sets

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L 27287-65

ACCESSION NR: AP5003938

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or rises by 2° can be grouped together for analysis. The analysis shows that the hydrometeorological elements and general weather influence ϵ_h by changing the horizon conditions. With a good horizon, ϵ_h for stars = $0'.7-1'.1$. Since the sun passes through $6 - 11^\circ$ during observations, the approximation: ϵ_h (in tenths of a minute) = h_\odot (in degrees) is helpful in calculations. With a dim horizon ϵ_h of a twilight star observation may exceed $2'$ and is more affected by hydrometeorological elements than by illumination. For night shots of Polaris (with an excellent horizon), $\epsilon_h = 0'.60$. A shipboard navigator must rely on average values of ϵ_h , which depend on the horizon and the index errors of the sextant. Since the values of ϵ_i also depend on these factors, the two can be correlated. To study these relationships a series of measurements was made in which the errors of 4-5 sets of 5 sun or star altitude measurements were related to 5-6 sets of 5 index-correction measurements (with the same horizon). The result for both the sun and the stars was: $\epsilon_h = 0'.3 + 0'.5 \epsilon_i$. The ϵ_i should be taken in the same vertical plane because the quality of the horizon may change with the azimuth. For determining ϵ_i in daylight, the same light filter should be used as the one to be employed for the altitude measurements.

Card 2/3

L 27287-65

ACCESSION NR: AP5C03938

Orig. art. has: 1 table and 2 figures.

ASSOCIATION: Glavnogo upravleniya moreplavaniya MFF (Main Navigation Office MFF)

SUBMITTED: 00

ENCL: 00

SUB CODE: AA, ES

NO REF SOV: 000

OTHER: 000

Card 3/3

RAKHOVETSIIY, A.

Sailing along the most advantageous routes. Mor.flot
25 no.6:16-17 J1 '65.

MIRA 19:1)

Glavnyy shturman Glavnogo upravleniya moreplavaniya
Ministerstva morskogo flota.

KONDRASHIKHIN, Vladimir Timofeyevich; RAKHOVETSKIY, Anatoliy Nikolayevich;
KHAGHATUROV, V.V., red.; LAVRENOVA, N.B., tekhn. red.

[Accuracy of the astronomic determination of a ship's position]
Tochmost' astronomicheskikh opredelenii mesta sudna. Moskva, Izd-
vo "Morskoi transport," 1961. 69 p. (MIRA 14:7)
(Nautical astronomy)

64780
S/194/62/000/01C/060/084
A061/A126

AUTHOR: Rakhovetskiy, A.N.

TITLE: Image orientation on radar screens

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 10, 1962,
63, abstract 10-7-125m (Inform. sb. Tsentr. n.-i. in-t morsk. flota,
1961, no. 70, 26 - 29)

TEXT: The practical features of image orientation on the indicator screen, as referred to the meridian or the diametral plane of a ship, are considered. Pilots preferably make use of the former reference in case of coastal navigation, when there is time to map the radar information obtained. When navigating in straits orientation with respect to the diametral plane of the ship is more convenient, since in this case the surrounding conditions are reproduced on the screen such as the pilot would see them were he standing on the bridge. Deviations from current orientation criteria are discussed and practical examples are considered. There are 2 figures.

V.Sh.

[Abstracter's note: Complete translation]

Card 1/1

RAKHOVETSKIY, Anatoliy Nikolayevich; BUKHANOVSKIY, I.l., kand. tekhn.
nauk, retsenzent; SAMOYLOVICH, T.A., red.; TIKHONOVA, Ye.A.,
tekhn. red.

[Radar observations in poor visibility] Radiolokatsionnoe na-
bliudenie v usloviakh plokhoi vidimosti. Moskva, Izd-vo
"Morskoi transport," 1962. 96 p. (MIRA 15:11)
(Radar in navigation)
(Collisions at sea--Prevention)

RAKHOVETSKIY, A.N., kapitan dal'nego plavaniya, glavnnyy shturman

Increasing the accuracy of position determination by two angles
by the selection of a common object. Sudovozhdenie no.2:57-60
'62. (MIRA 17:4)

1. Chernomorskoye gosudarstvennoye morskoye parokhodstvo.

RAKHOVETSKIY, A.N.

Radar observations in the open sea in the presence of shade
areas. Inform. sbor. TSNIIMF no.74: Sudovozh. i sviaz' no.19:
84-87 '62. (MIRA 16:6)

(Radar in navigation)

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001344

RADIO TEL. 1100, 1200, 1300, 1400, 1500, 1600, 1700, 1800, 1900, 2000, 2100, 2200, 2300, 2400, 2500, 2600, 2700, 2800, 2900, 3000, 3100, 3200, 3300, 3400, 3500, 3600, 3700, 3800, 3900, 4000, 4100, 4200, 4300, 4400, 4500, 4600, 4700, 4800, 4900, 5000, 5100, 5200, 5300, 5400, 5500, 5600, 5700, 5800, 5900, 6000, 6100, 6200, 6300, 6400, 6500, 6600, 6700, 6800, 6900, 7000, 7100, 7200, 7300, 7400, 7500, 7600, 7700, 7800, 7900, 8000, 8100, 8200, 8300, 8400, 8500, 8600, 8700, 8800, 8900, 9000, 9100, 9200, 9300, 9400, 9500, 9600, 9700, 9800, 9900, 10000, 10100, 10200, 10300, 10400, 10500, 10600, 10700, 10800, 10900, 11000, 11100, 11200, 11300, 11400, 11500, 11600, 11700, 11800, 11900, 12000, 12100, 12200, 12300, 12400, 12500, 12600, 12700, 12800, 12900, 13000, 13100, 13200, 13300, 13400, 13500, 13600, 13700, 13800, 13900, 14000, 14100, 14200, 14300, 14400, 14500, 14600, 14700, 14800, 14900, 15000, 15100, 15200, 15300, 15400, 15500, 15600, 15700, 15800, 15900, 16000, 16100, 16200, 16300.

1. Delivery information (location, date, time, name, phone number, etc.)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0013441

KONDRASHIKHIN, Vladimir Timofeyevich; RAKHOVETS'KIY, Anatoliy
Nikolayevich; KRASAVISEV, B.N., kand. geogr. nauk, red.;
MESHKOV, O.I., red.

[Astronomical ship position finding and compass correction]
Astronomicheskie opredeleniya mesta sudna i popravki kom-
pasa. Moskva, Transport, 1964. 125 p. (MIRA 17:9)

REZHOVETS'KII, A.N.

Position finding by circummeridian observations of the sun.
Inform. stor. TSMIIMF no. 120. Sudovozh. i sviaz' no. 27:
47-53 '64 (MIRA 19:1)

L 46755-66 FMT (d) R3
ACC NR: AR6004337

SOURCE CODE: UR/0274/65/000/009/B041/B041

AUTHOR: Rakhovetskiy, A. N.

REF SOURCE: Inform. sb. Tsentr. n.-i. in-t morsk. flota, vyp. 126, 1964, 19-23

TITLE: Error in the combination of pulses with different amplitudes when using the Loran-A radio navigation system

SOURCE: Ref. zh. Radiotekhnika i elekrosvyaz', Abs. 9B259

TOPIC TAGS: radio communication system, ship navigation

TRANSLATION: When using the Loran-A hyperbolic system for ship navigation, errors arise in the measurement of the arrival time of the pulse signals from master and slave stations. The errors are induced by the inequality of the amplitude of these signals. A means of experimentally removing the dependence of the error on the relation between the amplitudes is described. Since regulation of the amplification for the alignment of the amplitudes is often not possible, a recommended procedure is to introduce a correction in readings using a prescribed function. K. L.

SUB CODE: 17/ SUBM DATE: none

UDC: 621.396.985.31

Card 1/1-114

L 05880-67 EWT(d)/EWT(1)
ACC NR: AR6032266 (N) SOURCE CODE: UR/0398/66/000/006/V019/V019

AUTHOR: Rakhovetskiy, A. N.

TITLE: Mean quadratic error in the evaluation of the location by n-position lines

SOURCE: Ref. zh. Vodnyy transport, Abs. 6V118

REF SOURCE: Tr. Tsentr. n.-i. in-ta morsk. flota, vyp. 64, 1965, 61-64

TOPIC TAGS: astronomy, celestial navigation, n position line, navigation

ABSTRACT: The article presents a derivation of the general equation for the mean quadratic error in determining the location by n-position lines, whose random errors are independent:

$$M = \sqrt{\frac{[paa] + [pbb]}{[paa][pbb] - [pab]^2}}$$

where (paa), (pbb) and (pab) are the Gauss coefficients. In the case of equivalent altitude-position lines, formula (1) is as follows:

$$M = \epsilon_h \sqrt{\frac{n}{\sin^2 \Delta A_{11} + \sin^2 \Delta A_{12} + \dots + \sin^2 \Delta A_{(n-1)n}}}$$

where ϵ_h is the mean quadratic error of the altitude position lines, n is the

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UDC: 656.61.052.15

L 65 16-61
ACC NR: AR6032266

number of altitude position lines and ΔM_{12} , etc., are the paired differences of the azimuths of the celestial bodies. Individual cases in which the formula was applied to celestial navigation are examined. Orig. art. has: 3 reference items.
[Translation of abstract] (1)

SUB CODE: 13/

kh

Card 2/2

L 0586-31 GWT(1) GM
ACC NR: AR6032265 (W) SOURCE CODE: UR/0398/66/000/006/V019/V019
AUTHOR: Rakhovetskiy, A. N.
TITLE: Sighting errors in measuring the altitudes of stars [heavenly bodies]
SOURCE: Ref. zh. Vodnyy transport, Abs. 6V117
REF SOURCE: Inform. sb. Tsentr. n.-i. in-t morsk. flota, vyp. 133, 1965, 67-73
TOPIC TAGS: star, error measurement, star altitude, mean quadratic visual error,
navigation, celestial navigation

ABSTRACT: An analysis of the sources of errors in altitude measurements of stars
for astronomical determinations of a ship's position at sea makes it possible to
explain the main sources of error and, thereby, to determine the requirements for
the equipment, systems, methods, and textbooks used for astronomical evaluations.
Altitude measurement errors depend on the altitude of the star, on the magnification
of the sextant telescope, and on the quality of the image of the visible horizon.
Tables in the original article show the magnitude of the sighting errors, ϵ_{vis} , as a
function of the factors indicated. Numerous measurements were taken to determine
the correction index for the horizon ϵ_{cor} . The results showed that $\epsilon_{cor} = 0.^{\circ}26$ in an

UDC: 527

Card 1/2

act) has: 6 tables and
evaluations.

ACC NR: APG018902

(N)

SOURCE CODE: UR/0375/66/000/002/0059/0063

AUTHOR: Rakhovetskiy, A. N.

ORG: none

TITLE: Certain problems of determining the position of a ship by means of three altitude lines of position

SOURCE: Morskoy sbornik, no. 2, 1966, 59-63

TOPIC TAGS: ship, ship navigation, celestial navigation

ABSTRACT: The method of determining the position of a ship at sea by the altitudes of three stars is quite widespread in navigation practice; therefore, the author deems it expedient to examine only certain problems and to refine practical recommendations which are inadequately elucidated in textbooks and manuals on nautical astronomy. Since random errors in the lines of position result in the formation of an error triangle, the author uses the method of least squares to find the most probable position, assuming the altitude lines of position are equal point-for-point. Formulas are derived for the displacement of the most probable position resulting from a recurring error in the altitude lines of position. The effect of a recurring

Card 1/3

ACC NR: AP6018902

error if the error triangle is isosceles is examined. The effect of random errors in the lines of position is estimated by the mean square error and a table is used to facilitate the calculations. The accuracy of the altitude line of position is determined by the joint effect of the errors of measurement, correction, and calculation of altitude. These errors are composed of a number of random and independent errors; however, their effect on the accuracy of determining position is different since some of them affect the accuracy of position determination as random errors and others as recurring errors. However, experience has shown that recurring errors in altitude lines of position often predominate over random errors, and the errors in correction for inclination of the horizon are their basic source. When determining the position of a ship by the altitude of three stars, the recurring error in the altitude lines of position is composed every time of random and independent errors (the personal error of the observer, error in correcting the index, etc.); therefore, recurring errors can be estimated by the mean square value. An analysis of the errors of which the recurring errors are composed showed that their mean square value is 0.3-0'.5 when the inclination of the horizon is determined from observations, and 1.0-1'.5 when the tabular correction for the inclination of the horizon is used. Thus, the displacement of the most probable position as a consequence of the effect of the recurring error is a vectorial error. It is concluded that, when the recurring error is negligible, the accuracy of determining a position by three altitude lines of position depends only on random curves. With a difference of azimuths of the middle and extreme stars from

Card 2/3

ACC NR: AP6018902

40 to 140°, the accuracy of the determination is practically the same and is characterized by a mean square error of about 1.2. It was also found that, when recurring random errors in the lines of position are equal, a difference of azimuths within 100-140° will be optimal. Orig. art. has: 4 formulas, 1 table, and 2 figures.

SUB CODE: 12,13,17// SUBM DATE: none

6000 3/3

ACC NR: AR6035283 SOURCE CODE: UR/0269/66/000/009/0014/0014

AUTHOR: Rakhovetskiy, A. N.

TITLE: Sighting errors in measuring altitudes of celestial bodies

SOURCE: Ref. zh. Astronomiya, Abs. 9. 51. 132

REF SOURCE: Inform. sb. Tsentr. n.-i. in-t morsk. flota, vyp. 133, 1955,
67-73

TOPIC TAGS: ~~error measurement~~, error, error function, ~~altitude measurement~~,
celestial body, celestial navigation, ship navigation, practical astronomy

ABSTRACT: An analysis of sources of error in measuring the altitudes of celestial bodies for astronomical determinations of a ships position at sea provides an explanation of the basic sources of errors and thereby permits the establishment of the expediency or necessity of the requirements set forth for the devices, methods, and textbooks used for astronomical determinations. Errors in the measurement of altitudes are a function of the altitude of the celestial body, the power of the sextants spyglass, and the quality of the image of the visible horizon.

Card 1/2

UDC: 527

ACC NR: AR6035283

Tables of values are given for sighting errors ϵ_{sight} , as a function of the above factors. [Translation of abstract] [NT]

SUB CODE: 03/7

Card 2/2

RAKHOVICH, L. M.

3

1905. An electrical circuit for directly finding the distribution function of secondary electrons with energy.
N. B. GOR'KI AND L. M. RAKHOVICH. *Zh. teor. teor. Fiz.*, 26, No. 4, 434-6 (1954) in Russian.

Details a circuit which by virtue of a spherical condenser gives directly the distribution function. This is obtained for a caesium oxide cathode and the curve is seen to show a fundamental maximum and some supplementary peaks.

W. BARDSELEY

*** 111 0

Leningrad Electro tech Inst. Communications

4

ZAYEDNYY, A.N. Prinimali uchastiye; RAKHOVICH, L.M.; KLOVSKIY, D.D.;
PAK, I.N.;

[Tables and formulas of sums of series of the type $\sum_{n=1}^{\infty} e^{-rn^2} \frac{\cos nx}{\sin nx}$
and $\sum_{n=1}^{\infty} \frac{e^{-rn^2}}{n} \frac{\cos nx}{\sin nx}$] Tablitsy i formuly summ riadov vidov

$\sum_{n=1}^{\infty} e^{-rn^2} \frac{\cos nx}{\sin nx}$ i $\sum_{n=1}^{\infty} \frac{e^{-rn^2}}{n} \frac{\cos nx}{\sin nx}$. Pod red. A.M. Zaezdnogo.

Leningrad, 1958. 73 p.
(Series) (Mathematics—Tables, etc.)

9,7140

S/194/61/000/003/014/046
D201/D306

AUTHOR: Rakhovich, L.M.

TITLE: Current pulse stabilizing circuit in matrix ferrite core memory

PERIODICAL: Referativnyy zhurnal: Avtomatika i radioelektronika, no: 3, 1961, 31, abstract 3 B225 (Tr. nauchno-tekhn. konferentsii, Leningr. elektrotekhn. in-ta svyazi, no. 2, L., 1960, 67-70)

TEXT: A stable amplitude current pulse forming circuit is described, used in matrix ferrite-core memory. The performance of the circuit depends only slightly on the spread of tube parameters and on the amplitude of the formed pulses. 3 figures. 1 reference.
[Abstracter's note: Complete translation]

Card 1/1

9,7100

SL371
S/137160/000/006/012/013
A169/A026

AUTHORS: Zayezdnyy, A.M.; Rakhovich, L.M.

TITLE: A Specialized Computer for Harmonic Synthesis and Harmonic Analysis

PERIODICAL: Elektrosvyaz', 1960, No. 6, pp. 66 - 68

TEXT: The specialized computer "Sintez" is briefly described. A more detailed description of the computer is given by the above authors in "Trudy LEIS", 1959, No. 1, pp. 93 - 100. The computer was developed at the Kafedra teoretičeskoy radiotekhniki (Department of Theoretical Radio Engineering) of the Leningradskiy elekrotekhnicheskiy institut svyazi imeni professora M.A. Bonch-Bruyevicha (Leningrad Electrical Engineering Institute of Communications imeni Professor M.A. Bonch-Bruyevich). The computer is in operation since November 1958. It is built on the basis of the decimal calculation system with binary-quinary coding. The calculation results are printed on roll paper and are fixed as graphs by a self-recording instrument. The computer consists of three bays (Fig. 1), which hold somewhat more than 500 relays and 3,000 semiconductor diodes. The current consumption is 400 w a-c from the local network. The service life of the computer is determined by the service life of the relays. The relay

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A169/A026

A Specialized Computer for Harmonic Synthesis and Harmonic Analysis

contacts are not opened or closed under current, since the relays perform only the circuit preparation. It can be assumed that the service life of the computer will be of the order of some ten years, proper operation provided. The computer can work 24 h per day with a high load, which can be close to 100%. The computer is designed for the calculation of sums of trigonometric polynomials of the following type:

$$f(x) = \sum_{n=1}^N A_n \cos nx + \sum_{n=1}^M B_n \sin nx,$$

where for one calculation cycle the numbers N and M correspond to any of the following values: $N + M = 22, 48, 74, 100$; $N = 22, 48, 74, 100$; $M = 22, 48, 74, 100$. The factors A_n and B_n are introduced in the decimal system by four signs. The computer produces values of the functions to be synthesized in one of the following intervals: $\Delta x_1 = 18^\circ$; $\Delta x_2 = 48^\circ$; $\Delta x_3 = 108^\circ$; ($18^\circ = 2\pi/400 = 0.9^\circ$). A switching of the intervals is possible during the operation of the computer at any value of the argument. The circuits of the computer make it possible to perform the calculations in any given interval within $0 < x < 2\pi$. Besides performing operations of harmonic synthesis, which are the basic ones, the computer can

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perform operations of harmonic analysis according to Bessel formulas, entered into the machine in one of the following forms:

$$A_k = \frac{2}{N} \sum_{n=1}^N f(n \frac{2\pi}{N}) \cos(kn \frac{2\pi}{N}); \quad A_0 = \frac{1}{N} \sum_{n=1}^N f(n \frac{2\pi}{N}); \quad B_k = \frac{2}{N} \sum_{n=1}^N f(n \frac{2\pi}{N}) \sin(kn \frac{2\pi}{N}).$$

Here, $n = 1, 2, 3, \dots, k$ - number of decomposition harmonics; A_k and B_k - coefficients of the cosine and sine components, respectively; N - number of intervals into which the period of the function to be analyzed is divided; $f(n \cdot 2\pi/N)$ - ordinates of the curve to be analyzed in the points of decomposition.

It is possible to set $N = 4, 5, 8, 10, 20, 25, 40, 50, 80$, and 100 ordinates of the curve to be analyzed. The computer performs the analysis within five to 48 min. The computer can be used for the following purposes: a) calculation of steady-state processes under periodic external effects; b) calculation of transient processes (with application of P.K. Akulyshin's method); c) calculation of amplitude-frequency characteristics from experimental transient or pulse characteristics; d) calculation of linear systems in synthetic proposition; e) calculation of optimum operating conditions in some non-linear systems. Experience

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A Specialized Computer for Harmonic Synthesis and Harmonic Analysis

has already been accumulated in solving the above problems. In addition, work is under way to develop new periodic and almost-periodic functions by tabulating series whose sums cannot be represented in closed form by known functions. The functions established in this way can be used for high-speed determinations of transient processes in long transmission lines, steady-state processes in parametric systems, etc. There are: 1 figure and 2 Soviet references.

SUBMITTED: February 27, 1959

Card 4/4

4654

S/146/61/004/002/007/011
B124/B205

9,7140

AUTHORS: Men'shikov, G. G., Rakhovich, L. M.

TITLE: Procedure for designing a device for storage and selection
of sine- and cosine values

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Priborostroyeniye,
v. 4, no. 2, 1961, 67-71

TEXT: In harmonic analyzers and synthetizers polynomials

$$\sum_{n=1}^N (A_n \cos nx + B_n \sin nx)$$
 are calculated for the nodes $x: x_0, x_0 + \Delta x, \dots$

For the determination of the sine- and cosine values for variable values
of x and n harmonics, the devise must therefore indicate the values of
 $\sin nx$ and $\cos nx$. A special scheme for the reduction of nx to an acute
angle is used in the "Sintez" machine, which is provided for the case that
the distance of the nodes from each other is $\Delta x = 1$ degree (1 degree = 0.99)
and the number of harmonics equals 100. For this scheme it is adequate to
use 101 sin x values in the first quadrant. These values are stored in

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B124/8206 X

Procedure for ...

the apparatus in the form of a diode matrix. In the selection scheme the values for the argument nx , reduced to an acute angle, are produced; the code for the reduced argument is determined; the sign of the products $A_n \cos nx$, $B_n \sin nx$ (1) is determined. Previously, an arbitrary angle is assumed and the following designations are introduced: $k(z)$ denotes a whole hundredth of z , and z' the value $z - k(z)$. In this case $k(z)+1$ is the number of the quadrant in which the value z exists, and $z = z' + 100k(z)$ (2). A decimal stepwise adder (SA) of second class in the feeding device is used to elaborate the argument x . At the transition to a new node, SA sums $x + \Delta x$. When $x = x' + 100k(x)$ (3) is written down, then x' is stored in the SA, and $k(x)$ in the SQA. An arc adder (AA) is also provided, which works out the values nx' . In a transition to a new n , this adder obtains from SA the value x' and performs the operation $nx' + x!$ $nx' = (nx')' + 100k(nx')$ (4) holds, $(nx')'$ being stored in the (AA) and $k(nx')$ in the quadrant arc adder (QAA). From (3) and (4) results: $nx = (nx')' + 100[k(nx') + nk(x)]$ (5). Thus, $(nx')'$ is the value of nx reduced to an acute angle, which is fed into the table as address. The contacts QAA and SQA are part of the scheme which determines the code of the address $(nx')'$ (Fig. 1) and the sign of the products. From Eq. (5),
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S/146/61/004/002/007/011

B124/3206

Procedure for...

$\sin nx \} = \sin[(nx')^2 + 100 m_1]$ (6) is derived, where $m_1 = nk(x) + k(nx') + r$ and
 $r = \begin{cases} 0 & \text{for producing } \sin nx \\ 1 & \text{for producing } \cos nx \end{cases}$. Fig. 1 shows the contact relay diagram used in
the "Sintez" machine. The position of the contacts corresponds to the
pairs of values, $k(x)$, $k(nx')$ and r . The formation of the sign of the
products is also dealt with; under consideration of Eq. (6),
 $\text{sign}(B_n \sin nx) \} = \{\text{sign } B_n \} \text{sign}\{(nx')^2 + 100[nk(x') + k(nx') + r]\}$, where $\text{sign } z$
 $\text{sign}(A_n \cos nx) \} = \{\text{sign } A_n \} \text{sign}\{(nx')^2 + 100[nk(x) + k(n'x) + r + s]\}$, where $\text{sign } z$
is the value of the variable z . For the introduction of $s=0$, when the
coefficient is positive, and $s=1$, when the coefficient is negative,
 $\text{sign}(B_n \sin nx) \} = \text{sign } \sin\{(nx')^2 + 100[nk(x) + k(n'x) + r + s]\}$ is obtained, from
 $\text{sign}(A_n \cos nx) \} = \text{sign } \cos\{(nx')^2 + 100[nk(x) + k(n'x) + r + s]\}$ is obtained, from
which it results that the required sign is determined by the value
 $m_2 = nk(x) + k(nx') + r + s$. This study was recommended by the Department of
Theoretical Radio Engineering. There are 1 figure and 4 Soviet-bloc
references.

Card 3/5

Procedure for...

22554
S/146/61/004/002/007/01:
B124/B206

X

ASSOCIATION: Leningraiskiy elektrotekhnicheskiy institut svyazi im.
M. A. Bonch-Bruyevicha (Leningrad Electrotechnical Institute
of Communications imeni M. A. Bonch-Bruyevich)

SUBMITTED: November 2, 1960

Legend to Fig. 1: Contact relay variant of the code-forming scheme
a) degree of determination of the parity of $nk(x)$, b) degree of determination of the parity of $nk(x) + k(nx')$, c) degree of determination of the parity of $nk(x) + k(nx') + r$, d) input, e) information on the parity of n , f) information on the parity of $nk(x)$, g) information on the parity of $nk(x) + k(nx')$, h) output, i) contacts SQA (information on the parity of $k(x)$), j) contacts QAA (information on the parity of $k(nx')$), l) contacts of the programming counter (information on r), m) information on the parity $nk(x) + k(nx') + r$.

Card 4/5

GOL'DENBERG, L.M., dots.; LIPCHIN, G.S., inzh.; OKUNEV, Yu.B., inzh.;
POLYAK, M.N., inzh.; RAKHOVICH, L.M., inzh.; VZETSMAN, G.I.,
~~red.~~; ROMANOVA, S.F., tekhn. red.

[Digital differential analyzer] TSifrovoi differentsiyal'nyi analizator; informatsionnyi sbornik. Moskva, Sviaz'izdat, 1962.
(MIRA 16:3)
109 p.

1. Sotrudniki Leningradskogo elektroteknicheskogo instituta
svyazi imeni prof. M.A. Bonch-Bruyevicha (for Gol'denberg,
Lipchin, Okunev, Polyak, Rakhovich).
(Electronic differential analyzers)

ZAYEEDINYY, A.M., RAKHOVICH, I.M.

Criteria for evaluating the stability of communication channel characteristics. Elektronsviaz' 18 no.12:71-72 D '64.
(MIRA 18.i)

L 16461-66 EWT(d)

ACC NR: AP6005301

SOURCE CODE: UR/0413/66/000/001/0038/0039

38

B

INVENTOR: Rakhovich, L. M.

ORG: none

Q, 44

TITLE: Method of detecting phase-modulated signals transmitted by the method of double phase modulation. Class 21, No. 177471

SOURCE: Izobreteniya, promyshlennye obraztsy, tovarnyye znaki, no. 1. 1966, 38-39

TOPIC TAGS: signal detection, phase modulation

ABSTRACT: The proposed method of detecting phase-modulated signals uses post-detection integration. To simplify the receiver while maintaining quality of reception similar to that achieved by the phase comparison method, the detection of phase-modulated signals is achieved by calculating the correlation between the received signal and two reference signals taken from a single oscillator. The constant values of voltages obtained as a result of detection and integration are stored for the duration of one transmission and the adjacent elements of the detected signal compared.

[DW]

SUB CODE: 09 / SUBM DATE: 09Feb62 / ATD PRESS: 4205

Card 1/1 mc UDC: 621.376.9

Z

Rakhovskaya, M.S.

315. REGENERATION OF CERTAIN MINERAL OILS WITH LOCAL MARLS.
Gryazev, N.N. and Rakhovskaya, M.S. (Nauch. Eksped. Saratov. Univ. (Sci. Ann. Saratov Univ.), 1954 (Publ. 1955), 570, 57; abstr. In Ref. Zh. Khim. (Ref. J. Chem., Moscow), 1956, (20), 66077). Experiments are recorded on catalytic refining and filtration by percolation of turbine, transformer and diesel oils with local marls. The marls were more active than gumbrin and some were as active as Zikeev clay.

gmb
oay

AUTHOR: Call Nr: TS 213.245
Zhetvin, N.P., Rakhovskaya, P.S., Ushakov, V.I.

TITLE: Descaling of Metals (Udalenije okaliny s poverkhnosti metala) Methods Employed by the "Serp i Molot" Plant (Opyt zavoda "Serp i Molot")

PUB. DATA: Gosudarstvennoye nauchno-tehnicheskoye izdatel'stvo literatury po chernoy i tsvetnoy metallurgii, Moscow, 1957, 108 p., 4,000 copies

ORIG. AGENCY: None given

EDITOR: Ed.: Gamov, M.I.; Ed. of the Publishing House: Berlin, Ye.N.; Tech. Ed.: Attonovich, M.K.

PURPOSE: This is a manual for engineers and foremen engaged in metallurgical and machine-building plants.

COVERAGE: This book contains a description of the most advanced methods of descaling by acid and alkaline pickling, as well as of the electrolytic and the hydride method.

Card 1/3

Call Nr: TS 213.Z45

Descaling of Metals (Cont.)

The authors believe that the methods of pickling stainless austenitic Ni-Cr steels, semiferritic and ferritic high-chrome steels, and also of nickel and titanium alloys have as yet been insufficiently investigated and present many problems. They state that this book is an attempt to classify experiments in pickling and to show new approaches to this problem. Disadvantages and limitations of the acid pickling method are discussed. Experiments with sodium hydride methods are described. Methods of neutralizing and recovery of spent pickling solutions are also mentioned. There are numerous diagrams, tables, and chemical data. There are 29 references; of which 15 are Soviet, and 14 English.

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Descaling of Metals (Cont.)

Call Nr: TS 213.245

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AVAILABLE: Library of Congress
Card 3/3

Hatchovskaya, F.S.

AUTHOR: Slavkin, V.S. SCV/130-58-7-35/35

TITLE: "Removing Scale from the Surface of Metal" (Udalchiye skaliny s povrshnosti metalla). New Book by N.F. Zhetvin, E.S. Rakhovskaya and V.I. Ushakov. Published in 1957 by Metallurgizdat.

PERIODICAL: Metallurg, 1958, Nr 7, p 42 (USSR).

ABSTRACT: This is a review, on the whole favourable, of the above book.

Card 1/1 1. Metals--Scale

USCOMM-DC-55404

LB7; 25(1) PAGE 1 BOOK INFORMATION 507/133)

Korobtsev I. Isakovich (Editor); Borislav Stoyan (Corrosion and Protection of Steel: Collection of Articles) Moscow, Naukova Dumka, 1987, 215 p., 7,000 copies printed.

Ed.: N.D. Tomashov, Doctor of Chemical Sciences, Professor; Reviewers:
A.A. Zhabotinsky, Doctor of Chemical Sciences, Professor; and
E.G. Ponomareva, Doctor, Ed. of Publishing House "Naukova Dumka", Tech.
Ed.: S.M. Popova, Research Ed. for Literature on Machine and Instrument
Construction; B.Y. Polomsky, Engineer.

PURPOSE: This book is intended for scientific and technical personnel concerned with questions of the corrosion and protection of metals.

CONTENT: The articles in this collection deal with the corrosion of steels in corrosive environments, investigation of the effect of various factors on corrosion, and methods of protecting steels from acid and electrochemical corrosion. Special attention is given to new methods of investigation. A number of the articles obtained by the Department of Metal Corrosion, Vsesoyuznyy Institut stali (Moscow Institute of Steel),¹ were published here for the first time. Four articles are the result of work conducted jointly at the Laboratories of the Novosibirsk Metallurgical Research Bureau (Novosibirsk Metallurgical Plant "Serpukhovsk") and the Institute of Metal Physics, R.S.F.R. Khar'kov (Chemical Plant "Komsomolsk"). Most of the articles contain practical recommendations on the protection of steels from corrosion. No personalities are mentioned. References follow each article.

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REF ID: A67544

Smirnov, N. D., Doctor of Chemical Sciences, Professor, ed.

Borodav'ya i sushchitka konstruktsiykh metallicheskikh struktur v atmosfernyy vlastnosti (Corrosion and Protection of Constructional Metals). Collection of Articles (Articles) Moscow, Metallizdat, 1961. 288 p. Errata slip inserted. 10,000 copies printed.

Bd. of Publishing House N.P. Yezhov's Versch. Tech. Ed.: G.V. Suttorova; Directed Bd. for Literature on Chemical and Fertilizer Machine Building; V.D. Alyakov, Engineer.

PURPOSE: This collection of articles is intended for scientific and technical personnel concerned with the corrosion and protection of metals.

CONTENTS: The collection deals with problems of the corrosion of constructional metals in various environments and conditions. The articles discuss new methods for the investigation and testing of corrosion and give results of recent research conducted on the corrosion and protection of metal constructions. The corrosion of some new alloys is also considered. The collection includes articles summarizing the results of research conducted during the last 2-3 years in the Department for Corrosion of Metals of the Nauknerkii Institute of Steel (Novosibirsk Institute). Some of the articles were written in cooperation with the laboratory staffs of the Dzerzhinsk Plant, Tula Plant and Dneprochelyazavod in K.R.L. Kalinina (Chemical Plant Irkutsk). Results and conclusions are based on investigations conducted at these plants. No personalities are mentioned. There are 219 references, Soviet and non-Soviet. References are grouped by article.

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AVAILABILITY: Library of Congress (RA63-564)

S/137/61/000/011/107/123
A060/A101

AUTHORS: Kravchenko, T. G., Vedeneyeva, M. A., Rakhovskaya, F. S.

TITLE: Pickling of austenitic-ferritic steel 3M811 (EI811)

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 11, 1961, 56, abstract 111365 (V sb.: "Korroziya i zashchita konstrukts. metallich. materialov". Moscow, Mashgiz, 1961, 72 - 92)

TEXT: The formation of the metallic film on the surface of steel EI811 when it is being pickled by the alkali-acid method occurs in the acid stage of the pickling. On the basis of the work carried out, it is possible to recommend the pickling of the steel in a solution of 10% HNO_3 + 4% NaF at 20 and 40°C in order to prevent the formation of a loose metallic film on the surface of the EI811 steel. Pickling in that solution reduces the number of operations, eliminating the treatment in the alkali solution and the bleaching in HNO_3 . The duration of pickling at 20°C does not exceed the duration of the pickling by the alkali-acid method, and at a temperature equal to 40°C the pickling time is reduced by a factor of three. In order to prevent metal spoilage in the course of pickling by the alkali-acid method, the following measures are recommended: a) the intro-

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Pickling of austenitic-ferritic steel 9N 811 (EI811) AC60/A101

duction of corrosion inhibitors 4M and ПБ5 (CHM and PB5) into the acids at the acid pickling stage and strict observance of the time-schedule of their introduction; b) the use of 18% HCl at the acid pickling stage; c) raising the steel hardening temperature and increasing the holding duration of heating for hardening; d) strict observance of the acid pickling time schedule (holding over of the metal in the acid vat may lead to the formation of films). There are 8 references.

✓
Ye. Layner

[Abstracter's note: Complete translation]

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Continuous electrolytic pickling of...

plied instead of lead ones. The pickling of a 1.6-mm diameter 1Kh18N9T steel wire at current densities of 34 - 42 a/dm² for 12 seconds yielded the optimum result; a bright, clean surface. When applying the possible maximum current density for the given conditions (42 a/dm²) a satisfactory surface was obtained in 9.5 seconds. Electrolyte C) gave results similar to A); electrolyte B) was unsatisfactory. Increasing the current density above 40 a/dm² did not accelerate the process; the required time could not be shortened under 12 seconds. The alkaline solution and electrolytes A) and C) can also be applied in pickling carbon steel wire. In that case, at a current density of 15 - 18 a/dm² the output of the process increases by a factor of 1.6 - 1.7 as compared with the continuous chemical process. The industrial-scale tests were carried out by setting 90-mm wide baths of 1Kh18N9T steel in the conventional thermal pickling equipment, filled with the following solutions:

Alkaline bath: 65% NaOH + 30% NaNO₃ + 5% NaCl at 450 - 470°C

Acidic bath: 18% H₂SO₄ + 1% NaCl + 5% NaNO₃ at 80 - 85°C

Bleaching bath: 8% HNO₃ at room temperature

In pickling 3.6 mm diameter 0Kh18N9T and Kh18Ni1M steel wires, a clean, bright and scale-free surface was obtained at a rate of 10.5 m/min, (20 sec. in the al-

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kaline, 29 sec. in the acidic and 11 sec. in the bleaching bath). In the simultaneous pickling of 24 wires, at a rate of 20 ton/day, a generator power of 140 kw (51 v, 2,750 a) is required. In pickling stainless steel strips, (0.5 mm thick, 40 mm wide) in the pilot installation, the cathodic and anode plates (0.5 mm long in the alkaline bath and 1 m long in the acidic bath) were set parallel to the movement of the strip. On account of the larger surface of the strip, the maximum current density was lowered to 12 - 15 a/dm². The strips tested were made of 1Kh18NYT, 1Kh18N9, 3M 432 (EI432), 3M 435 (EI435), X13H4Г9 (Kh13H4G9) and 1X-13 (1Kh13) steel grades. In the alkaline bath 100-% NaOH (at 450°C), in the acidic bath solutions A) and C) (at 70°C) were tested. A satisfactory surface was obtained with these solutions, when keeping the strip 6 - 9 seconds in the alkaline bath and 9 - 15 seconds in the acidic one. As in currentless continuous chemical pickling - under industrial conditions - the pickling of the same strip requires 82 seconds, the electrolytic method increases the output of the process 3 - 4 times. For pickling strips 0.5 mm thick and 400 mm wide at a current density of 15 a/dm² and with electrode plates 7 m long, the generator power required will be 1,260 kw (150 v, 8,400 a). There is 1 figure.

ASSOCIATION: Zavod "Serp i molot" ("Serp i molot" Plant)

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L 42276-65 EPF(n)-2/EWP(z)/EWT(m)/EWP(b)/EWA(d)/EWP(t) Pu-4 IJP(c) JD/JG
AM5009839 BOOK EXPLOITATION S/ 30
Zhetvin, Nikita Petrovich; Rakhovskaya, Faina Samoylovna; Ushakov, Viktor 28
Ivanovich B+1

Removing scale from a metal surface (Udaleniya okaliny s poverkhnosti metalla)
2d ed., rev. and enl. Moscow, Izd-vo Metallurgiya, 1964. 194 p. illus.,
biblio. Errata slip inserted. 3090 copies printed. Editor of the publishing
house: Ye. N. Berlin; Technical editor: R. Ya. Ginzburg

TOPIC TAGS: etching, scale removal, pickling, steel, titanium alloy, molybdenum
alloy, corrosion cracking

PURPOSE AND COVERAGE: This book was intended for engineers and may be used also
by foremen at metallurgical and machine-building plants. The experience of the
"Serp i Molot" plant in etching carbon, stainless, and high-temperature steels and
certain alloys (shapes, sheet, strip, and wire) is described. Information is pre-
sented concerning the most modern methods of acid, alkali, hydride, and electroly-
tic etching. This edition covers additional experimental work done at the plant
from 1957 through 1962. The authors express their gratitude to V. G. Ledkov.

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SUB CODE: MM

SUBMITTED: 17Feb64

NR REF Sov:037

OTHER:028

CC.
Card 2/2

BAKHOVSKAYA, S.M.

GRYAZEV, N.N., kandidat khimicheskikh nauk; BAKHOVSKAYA, S.M., inzhener;
TRAKHTMAN, B.N., inzhener.

Volga region diatomites as adsorbents for continuous recovery
of transformer oil. Elek.sta. 25 no.12:33-34 D '54. (MLR 7:12)
(Diatomaceous earth) (Insulating oils)

RAKHOVSKAYA, S. M.

Activation of some bleaching earths of the Volga region.

V. N. Gryazev, S. M. Rakhovskaya, and L. P. Shulepova
(N. G. Cheryushevskii State Univ., Saratov), 245.
Priklad. Khim. 29, 1006-17 (1956); cf. preceding abstr.—

The relative effectiveness of bleaching earths from 4 regions of the Saratov province activated with NH₃ was tested with transformer and turbine oils by the change in the acid no. and their increasing clearness compared with that of

H₂O. The activity of earths with a pH of the alkali levels was not affected by treatment with NH₃, whereas the activity of earth no. 108 with a pH in the acid level was appreciably increased. Activated with an aq. soln. of NH₄OH the activity of no. 108 increased abruptly after the absorption of 1-2% NH₃; the pH increased from 5.25 to 9.2 after the absorption of only 0.47 wt. % of NH₃. Further satn. with NH₃ decreased the activity somewhat. This was ascribed to the simultaneous absorption of H₂O with the NH₃. With dry NH₃, the activity increased abruptly with 0.21% NH₃, and the acid no. dropped from 0.107 to 0.030. Good results were obtained when 0.45% NH₃ was absorbed. Further satn. with NH₃ (complete satn. with 1.73% NH₃) did not decrease the activity. Different methods of activation increased the activity in the following order: Al₂O₃.nH₂O < HCl < NH₄OH up to 0.5% NH₃ adsorbed < dry NH₃ up to 0.45% NH₃ absorbed. Activation of the earth with H₂SO₄ did not lower the acid no. of the oil but increased its clarity. Activation with Al₂O₃.nH₂O was made by treating the earth with a 10% Al₂(SO₄)₃ soln. for 24 hrs. and then with concd. NH₄OH for 2 hrs.; after washing free of SO₄²⁻ it was dried at 200°.

I. Bencowitz

RAKHOVSKAYA S.M.

376. ACTIVATION OF SOME BLEACHING EARTHS FROM THE VOLGA VALLEY.
Orlyanov, N.N., Rakhovskaya, S.M. and Shulapova, I.P. [Zh. prikl. Khim. (J. Khim.) (Ref. J. Chem., Moscow), 1956, vol. 29, (3), 1006-1017; abstr. in Ref. Zh. Khim. (Ref. J. Chem., Moscow), 1957, (11), 38729]. Local marls from Saratov and Saratov provinces were compared with Zil'ksov marl as applied to transformer and turbine oil. Some were as good as Zil'ksov marl and better than gumarin. They can be activated by treatment with ammonia vapour or aqueous solution until saturated with about 3% ammonia by weight. Good results were obtained by depositing aluminium hydroxide on the marl and subsequent heating to 200°C. Treatment with concentrated sulfuric acid and with vapour of hydrochloric acid was not effective.

RAKHOVSKAYA, S.M., Cand Chem Sci -- (diss) "Inquiry into the
adsorbing properties of natural Sorbents of - Povolga - Volga River
under conditions of Purification of power engineering Oils."
Saratov, 1958, 17pp (Saratov State Univ im N.G. Chernyshevskiy),
150 copies. (KL, hl-58, 120)

GRYAZEV, N.N.; RAKHOVSKAYA, S.M.

Processes of the adsorption refining of mineral oils. Khim.
tekhn. i masel 5 no. 11:23-29 N '60. (MIRA 13:11)

1. Saratovskiy avtomobil'no dorozhnyy institut i Nauchno-
issledovatel'skiy institut khimii pri Saratovskom universitete
im. N.G. Chernyshevskogo.
(Mineral oils) (Adsorption)

RAKHOVSKAYA, S.M.; GRYAZEV, N.N.

Sorption of organic acids by Volga gaize. Uch.zap. SGU 75:125-
128 '62. (MIRA 17:3)

TOPCHIYEVA, K.V.; RAKHCVSKAYA, S.M.; KUCHKAYEVA, I.K.; SHAMINA, I.S.;
YURKEVICH, A.A.

Modifications of the supporting structure of phosphoric acid
catalysts in the ethylene hydration process. Neftekhimiia 3
no. 2: 271-275 Mr-Ap '63. (MIRA 16:5)

1. Saratovskiy gosudarstvennyy universitet imeni N.G.Chernyshevskogo,
Nauchno-issledovatel'skiy institut khimii, Moskovskoy gosudarstvennyy
universitet imeni Lomonosova i Leningradskiy tekhnologicheskiy
institut imeni Lensoveta.
(Phosphoric acid) (Ethylene) (Hydration)

ACC NR: AP/C12434

SOURCE CODE: UR/0419/000/003/0022/0028

AUTHOR: Kuchkayeva, I. K.; Rakhovskaya, S. M.; Klyukina, N. C.; Tsenter, L. A.; Shamina, I. S.

ORG: Saratov State University im. N. G. Chernyshevskiy (Saratovskiy gosudarstvennyy universitet)

TITLE: Absorption-structural properties of modified natural sorbents from the Volga region

SOURCE: AN BSSR. Vestsi. Seriya khimichnykh nauk, no. 3, 1966, 22-28

TOPIC TAGS: mineral, adsorption, / Lower Volga region, Central Volga region

SUB CODE: 08,07

ABSTRACT: The Lower and Central Volga regions abound in natural sorbents such as diatomites, tripoli earths, opokas. In this connection the authors investigated the effect of calcining temperature on the adsorption properties of specimens of these minerals, which also were subjected to radiographic, chromatographic, and other tests. It was established that the applicability of these natural sorbents may be widened if they are subjected to proper types of treatment such as chemical activation with acids to increase pore volume and to increase the number of hydroxyl groups at the surface of the activated specimens. These hydroxyl groups are chemically active sites with respect to the adsorp-

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ACC NR: AP7012434

tion of polar substances such as methyl alcohol. Hydrophobic properties may be enhanced by adding ferric chloride as activator. Orig. art. has: 5 figures, 1 formula and 2 tables. [JPRS: 40,422]

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POLUBOYARINOV, D.N.; RAKHOVSKAYA, T.I.

Properties of refractory materials of the mullite-corundum order.
Ogneupory 19 no.6:262-270 '54. (MIRA 11:10)

1. Kafedra keramiki i ogneuporov Moskovskogo khimiko-tehnologicheskogo instituta im. D.I. Mendeleyeva.
(Mullite) (Corundum) (Refractory materials)

RAKHOVSKAYA, Ye.

Multirope mine hoisting machines. Mast.ugl. 5 no.5:24 My '56.
(MILIA 9:8)
(Hoisting machinery)